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ABSTRACT

The four issues of this volume are each concerned with a specific topic in population studies. Issue number 1, "Demographic Illiteracy," indicates that U.S. students are not aware of world population growth patterns. The information is taken from the Second International Science Study, 1983. An annotated list of 16 population studies resources is included. Issue number 2, "The Changing Face of America," is designed to accompany the student chartbook teaching module, "U.S. Population: Charting the Change," and contains review and reference questions for that material and an annotated bibliography of nine related resource materials. Issue number 3, "Teachers Guide to 'Facts in Focus,'" is an explanation of the teaching module, "World Population: Facts in Focus," and consists of a one-page teacher's guide for that publication and an additional one-page worksheet, "Where in the World?" An annotated list of six resources is also given. Issue number 4, "What Is Overpopulation?" defines overpopulation and discusses carrying capacity and overpopulation measurements. An annotated list of three related resources is included. This is the final issue of "Population Education Interchange" and a short history of the publication is given. (PPB)

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VOLUME 17, NUMBER 1-4, 1988

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POPULATION EDUCATION INTERCHANGE

February 1988 Volume 17, Number 1

ISSN 0047-0465

Demographic Illiteracy

Cultural illiteracy. Geographic illiteracy. Demographic illiteracy? Recent studies have indicated that U.S. students lack common knowledge and basic geographic awareness. Now another study asks: Do our students recognize the patterns of world population growth during the past 1,000 years?

An item in the Second International Science Study asked U.S. students to select the graph which best showed the nature of population growth in the past 1,000 years (see graphs on this page). The results show that the majority of students tested did not know the history of world population growth and failed to understand the fundamental concepts of population growth. An assessment of the study results follows.

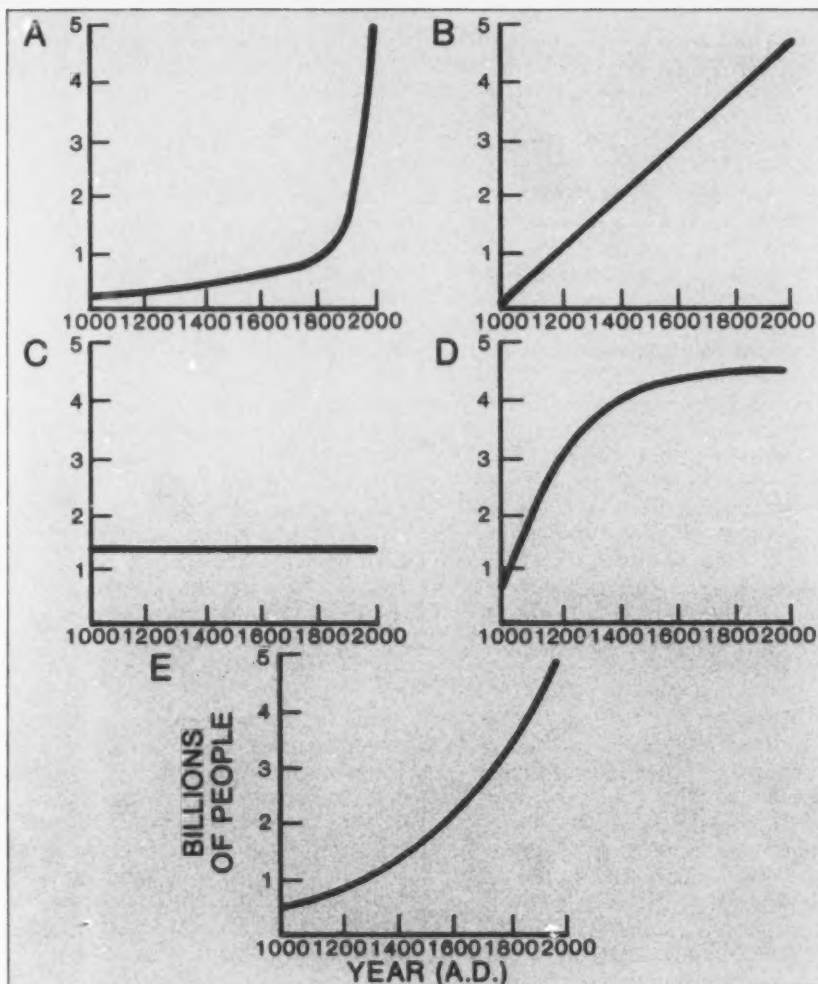
Study Results

The question and set of graphs to the right was included in the testing carried out in the United States in the Second International Science Study. (The actual graphs used in the test only reached 3 billion.) The tests were administered to over 20,000 students in more than 1,000 schools in the spring of 1983.

Listed below are the students tested and the percent of the sample that answered the question correctly ("A").

Study Group by Grades	Percent Correct
Fifth	10
Ninth	16
Tenth (Studying Biology)	18
Twelfth (Non-Science)	24
Twelfth (Advanced Biology)	25
Twelfth (Studying Physics)	44

The correct selection indicates that students knew that the human population grew very slowly until the 18th century and more rapidly



Which graph best shows human population growth in the world during the past 1,000 years?

thereafter; world population reached 1 billion in 1800 and surpassed the 3 billion mark in the late 20th century (as mentioned before, the graphs in the study only went to 3 billion). It also indicates that the students may have the knowledge that populations increase geometrically—they grow by multiplication, e.g., 3, 9, 27, 81, etc. The "J" shape of the curve indicates geo-

metric growth.

In all samples, less than 50 percent of students responded correctly. As should be expected, students in upper grades did better than those in lower grades. But, why do students learning twelfth grade physics do substantially better than

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twelfth grade advanced science students who are studying a second year of biology? Of special concern are the twelfth graders who were not studying science — future citizens and policymakers: only about one-quarter of these answered the question correctly.

The answers that some students selected shed some light on the extent of their knowledge of world population growth and understanding of the geometric nature of population growth. The most popular choice among the group of fifth graders was graph "B" (chosen by 42 percent). This indicates that these students do not know the historical trend of world population growth and that they also believe it to grow arithmetically, a common mistake made by young people. When a series of numbers increase arithmetically they increase each time by the same amount, e.g., 3, 6, 9, 12, etc. A diagonal line indicates arithmetic growth.

The second most frequent response was graph "E" (22 percent). This could indicate that these students did know about the geometric nature of population growth, but did not know about its history. The correct representation (A) was the response least frequently selected by this group.

Among ninth graders graph "E," which shows geometric growth but inaccurately depicts the actual number of people, was selected most frequently (43 percent). Graph "B" was the second most frequent choice. The correct choice was the third most-frequently-selected among this group.

An understanding of the nature of human population growth is necessary to understanding our world as well as managing population-related problems in health, education, and environmental protection, among others. U.S. students, when they finish elementary and secondary school, should have some understanding of the nature of human population growth. In 1983, a substantial number did not.

Study Results Submitted by: Willard J. Jacobson, National Research Coordinator, International Association for the Evaluation of Educational Achievement.

RESOURCES

Requesting Country-Specific Information from PRB

The Population Reference Bureau receives many requests for population information on specific countries/regions. We do our best to respond immediately and appropriately to all requests; however, we have a few tips for those requesting information that will help ensure the proper response. Please be as specific as possible in your request. Let us know if you have a deadline and try to allow at least three weeks for a response. If you are a teacher and are having your whole class write, please send all the letters together with a brief cover letter explaining the assignment and listing the selected countries. (We do not wish to deprive students of a letter-writing activity, however our response can be expedited if we can respond to a whole class at one time rather than numerous individual requests.)

The type of information that you may expect to receive is a brief bibliography of selected sources and handouts or photocopies when available and/or applicable. We do not provide color maps, coins, photos, or stamps.

The list below represents selected reference titles within our library's collection which are useful for basic country profiles. All are issued annually, provide rudimentary information in varying depths, and should be available within a public, university, or high school library. These references can be purchased for a nominal fee.

General

Handbook of Nations, compiled and published by the Central Intelligence Agency and reissued by Gale Research Company. Detroit, MI: Gale Research.

This handbook provides one-page statistical summaries which include data on the economy, government, land, demographics, communications, and national defense of 223 nations. Small country maps are provided.

Countries of the World and Their Leaders Yearbook, 2 Volumes, compiled by Gale Research Company. Detroit, MI: Gale Research.

Based predominantly on the State Department's *Background Notes*, the four- to seven-page summaries extend coverage beyond the aforementioned handbook to include travel notes, foreign relations, and principal U.S. officials. Page-size country maps are included.

The Europa Year Book: A World Survey, 2 Volumes, compiled by Europa Publications Ltd. London (Distributed in the U.S. by Gale Research). Detroit, MI: Gale Research.

Principal sources used in the compilation of this source include the UN's **Demographic and Statistical Yearbooks** and the **FAO Production Yearbook**. The summaries of 176 countries and territories include recent history, economic, and statistical surveys, as well as details of their constitutions.

Regional

The Middle East and North Africa; Africa South of the Sahara; The Far East and Australasia; and South America, Central America and the Caribbean, individual volumes compiled by Europa Publications Ltd. London (Distributed in the U.S. by Gale Research). Detroit, MI: Gale Research.

It is hard to cover the world in one or two volumes, but these represent an excellent series which provides encyclopedic coverage of the countries and regions. Recognized academic experts have signed their contributions. Excellent regional maps are supplied on a variety of subjects.

Asia-Pacific Report: Trends, Issues, Challenges 1987-1988, edited by Charles E. Morrison. Honolulu, HI: The East-West Center.

This annual compendium reviews the political and economic developments of the region during the mid-1980s. The 1987-1988 edition focuses on Marine Policies and the New Pacific Island States. It provides concise synopses of the issues facing marine economies and the unique development problems faced by is-

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land nations. Maps and tables are liberally used throughout the text.

Periodicals

Periodicals are also excellent sources for country information. PRB's own **Population Today** "Spotlight" section has published one-page country/state surveys since 1985 and there is a "Survey Report" featuring an individual country in each issue. **Consumer Markets Abroad** (a 16-page serial until April 1987 called **International Demographics**) devotes each issue to a specific country or metropolitan area. It is published monthly by American Demographics. **The Economist's** country surveys, published irregularly, are current and noteworthy.

Do not forget **Almanacs**. Coverage is perhaps the briefest of all the previous annuals mentioned; however, they do provide color reproductions of national flags and are widely available.

PRB's annual **World Population Data Sheet** is always a useful source of demographic information. It may be purchased from PRB for \$2.00, plus \$1.00 shipping. PRB has also compiled population policy papers, ranging from 2-4 pages in length, for 120 countries. These papers are available for \$1.00 each (postage included); write to PRB for a listing of countries for which policy information has been compiled. **All orders must be prepaid.**

Books

China: Population Education and People, by Stewart E. Fraser 1987. Centre for Comparative and International Studies in Education, School of Education, La Trobe University, Bundoora, Victoria 3083, Australia. 200 pp. \$20.00 plus \$5.00 postage charge. Please prepay with checks made out to Population Education Studies.

This study discusses the many aspects of the development of China's population policy, the impact on national minorities, family planning incentives and disincentives, and the one-child policy. It also contains results of the 1982 Census and resulting demographic projections. The second part of the book contains a translation of a senior

high school text on *Population Education* and an account of Ma Yin-chu's 30-year-old debate on China's population policy.

Software

Social Studies Tool Kit: The World and **Social Studies Tool Kit: The States** are software packages which allow the user to display, rank, graph, highlight, and map data. They are also capable of making a correlation between two files, performing simple mathematical functions, calculating percentile rankings, and making weighted averages. The charting, graphing, mapping, and calculating tools allow students and teachers to process the information in a way that aids in answering interpretive questions.

Social Studies Tool Kit: The World contains data for 151 nations. There are 84 statistics on topics such as population, geography, health care, government, crime, and economics.

Social Studies Tool Kit: The States provides tools useful in social analysis plus a large quantity of up-to-date demographic, geographic, political, and social information on the U.S. states.

Both packages were carefully designed by two teachers and provide the tools necessary for easy use by the instructor and a maximum learning experience for the student. The menu-driven program is very "user friendly"; the user need know only how to insert a disk to use the program. Both packages contain computer readiness exercises which prepare the students for interpreting charts, graphs, and maps and provide background for the mathematical components of the program. The classroom application section eases the process of integration for the instructor. Questions and projects for students at different grade levels are included in the packages; the range of activities within the package also makes it easily adaptable to the level of each student.

Advantages:

The design of the programs and the packages is conducive to class-

room use. New files can be created and added by entering new information or by mathematically adjusting the files.

Disadvantages:

Because of the wide variety of functions that these programs can carry (particularly the **World** package) and the large set of data files, the programs require the use of multiple disks, which could become confusing for students. The amount of time used to transfer data files can be enormous as the program is extremely slow. However, with good preparation by the instructor, the amount of disk transfers necessary and classroom time used to copy data files can be minimized.

Social Studies Tool Kit: The World and **Social Studies Tool Kit: The States** are designed for use in social studies and math classes in grades 5-12. The programs require an Apple II+, IIc, or IIe (48K) computer. Packages can be purchased for \$89.00 each from: Great Lakes Software, P.O. Box 8756d, Green Bay, WI 54308. The **World** package comes with six diskettes and six back-up diskettes. The **States** package comes with four diskettes and four back-up diskettes. Both packages include a clear, comprehensive user's manual.

New from the World Bank

Measures of Progress poster kit series. Kit No. 1 is *Life Expectancy at Birth* and No. 2 is *Population Growth*.

Each kit contains: 1) a 24" x 36" world map on heavy paper with data on 148 countries; 2) six 8½" x 11" color pictures showing scenes of people in the developing world working to improve their lives, with text explaining the process of social and economic development; 3) a 16-page teachers' guide describing a full range of activities using the poster and photographs as well as a test.

The cost of each kit is \$6.50 (prices vary outside the U.S.). Send orders to: World Bank Publications, Department 0552, Washington, D.C. 20073-0552.

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New in the AV Library

The Desert Doesn't Bloom Here Any More, 1987, 58 minutes, VHS. Coronet/MTI Film and Video, 108 Wilmot Road, Deerfield, IL 60015, (800) 621-2131 VHS \$250

This film admirably shows the issues of concern to farmers living near or in deserts in both industrialized and developing nations. Burkina Faso farmers are shown in the first part of the program as they fight the advance of the Sahara Desert. The second part shows how the U.S. government has subsidized the building of irrigation projects, which in the short run have increased agricultural projects, but in the long run have damaged the land and endangered wildlife. Coverage of both low- and advanced-technology innovations shows the complexity of the situation and the lack of simple solutions for meeting the needs of the people and solving environmental problems.

WETA's Global Links Series

Global Links, 1987, each program 28 minutes, VHS (see address and purchasing information below).

Global Links is a six-part series of half-hour videotapes with printed materials, which serve as an excellent resource for teaching about social and economic development in developing nations. Programs touch upon the interdependence that affects the economic, political, and social structures of both developing and industrial nations. The teacher/student guides have background reading, glossary, topics for discussion, research activities, and references. The six programs are: "Traditions and the 20th Century," "Curse of the Tropics," "Women in the Third World," "Earth: The Changing Environment," "Education: A Chance for a Better World," and "The Urban Dilemma."

The **Global Links** programs listed above are available for purchase in VHS or ¾" cassettes. Order individual tapes or the entire series (includes training tape). The series can be purchased for \$175.00 plus \$10.00 for shipping and handling.

Teacher/student guides for both secondary schools or universities can be purchased for an additional \$2.50 each. For further information call: (800) 445-1964 or (703) 998-2709. Order from: WETA Educational Activities, P.O. Box 2626, Washington, D.C. 20013.

Human Numbers, Human Needs.

1986, 19 minutes VHS (NTSC).

Based on the International Planned Parenthood Federation's 1984 book, *Human Numbers, Human Needs*, this program completely and concisely discusses the pressures human population growth places on resources and the environment. The program contains the necessary introduction to population dynamics, and then links this growth to food, education, health care, employment, and environmental destruction, among other issues. It offers some solutions to assist in family planning efforts. A slide presentation on videotape, the program's information is delivered in an unbiased, interesting manner.

Human Numbers, Human Needs may be purchased from: International Planned Parenthood Federation, 18-20 Lower Regent Street, London SW1Y 4PW, England. The cost is \$40.00. Order the NTSC VHS format (this format is compatible with U.S. VHS machines).

The audiovisual programs listed above may be purchased directly from the distributor or rented from the PRB Population-Environment Film Library. The rental fee is \$10.00 per film, videotape, or slide program. Send your orders to: PRB Film Library, 777 14th St. NW, Suite 800, Washington, D.C. 20005. For a free copy of the film catalog send a self-addressed stamped envelope to the address above.

PRB Materials and Memberships

Are you interested in rounding out your *Population Education Interchange* collection? Back issues of *Interchange* are available for \$1.00 each, two or more copies, .75 each. Titles include:

- "Demographic Illiteracy," February 1988
- "Where is the Metropolitan U.S.?" December 1987
- "Mexico's Population: A Profile," May 1987
- "Nature's Checks on Population Growth," December 1986
- "A Potpourri of Population Puzzles," May 1986
- "A Guide to Classroom Software," December 1985
- "The Food Crisis in Sub-Saharan Africa," March 1985
- "Charting World Population Change," June 1984

Back issues of the *Population Learning Series* modules, which are accompanied by an issue of *Interchange*, are also available for \$2.00 each, two or more copies, \$1.75 each. See a list of titles on the back page of the *Population Learning Series*.

If you find *Population Education Interchange* interesting and useful, you would probably enjoy receiving other PRB publications. PRB has a special membership rate for teachers. For only \$28 per year, an Educator Member receives four issues of *Population Education Interchange*, two *Population Learning Series* Modules, The *World Population Data Sheet*, The U.S. *Population Data Sheet*, four *Population Bulletins*, 11 issues of *Population Today*, and occasional issues of the *Population Trends and Public Policy* series.

To join, send your name, address (and school affiliation, if different from address), and check to: Population Reference Bureau, P.O. Box 96152, Washington, D.C. 20090-6152.

Interchange Is...

a publication of the Population Reference Bureau, published quarterly during the academic year. This issue was written by Kimberly A. Crews and produced by Tracey A. Smith. The purpose of the newsletter is to further the goal of infusing population materials into the U.S. schools by (1) presenting information on population-related issues, (2) distributing classroom materials, and (3) reviewing developments in the field of population education. *Interchange* depends upon an exchange of information and ideas and thus openly solicits correspondence from its readers.

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The Changing Face of America

Today, a "typical" United States citizen is white, about 32 years old, and lives in a family household in Missouri. If current trends in the United States' population composition and age structure continue, the profile of a 21st century citizen is likely to be much different; current trends suggest that people are also likely to have different lifestyles and reside in new places.

The United States' population makeup has changed dramatically since the first colonists arrived from England in the early 17th century. Until the 19th century, the majority of Americans were young whites living on farms in large family households in today's East and South. As the country has become more industrialized and urbanized, people have moved away from the farm to urban areas, and have had fewer children. Today, people are more likely to live in non-family households. They are, and increasingly will become, middle-aged and elderly. They are more likely to be black, Hispanic, and Asian. And they are more likely to live in the Southwest.

The student chartbook, "U.S. Population: Charting the Change," accompanying this issue of *Population Education Interchange*, is a compilation of indicators of population change and demographic information in the form of maps and charts. The chart and map titles are:

- Population Gain or Loss in the United States, 1980-1986
- Age and Sex Composition of the U.S. Population
- Composition of U.S. Households, 1960 and 1985
- U.S. Racial and Ethnic Composition, 1950-2020
- The Wage Gap, 1985
- Net Migration in the United States

Each map/chart is accompanied by a written interpretation and analysis of the topic. A set of pre-



Jill Merrick



AARP

Lawrence Pebs

reading questions will help the student absorb the information and will also serve as review questions. The answers to most questions can be found in the text; however, some were included to promote active reading and are not fully answered in the text. A glossary of population terms provides students with a source to reinforce definitions and build their demographic vocabulary.

To assist you in using these charts and maps in your classes, we have provided additional review questions in this teacher's guide. The answers are included in brackets. We have also included additional research activities and a list of resources, including audiovisuals. The student booklet can be used as a complete unit or as separate lessons; the

charts are perforated at the inside margin for easy removal. Ordering information for classroom sets of the student chartbook can be found on page three.

Some of you may remember the PRB Chart Series I, II, III, and IV, published in the mid-1970s. In 1984 some of the charts were revised and updated for the *World Population: Fundamentals of Growth* chartbook. The popularity of the world charts prompted the making of *U.S. Population: Charting the Change*. Some of the charts and maps in this set are updated versions from the original series. Others are unique to this publication.

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U.S. Population: Charting the Change

Review Questions

Population Gain or Loss in the United States

1. Which regions have had the greatest gains in population during the 1980s? What contributed to these gains?
(The South and West. The large gains in many of these states were due to large numbers of migrants from other states and abroad, and to higher rates of natural increase.)
2. What is the reason for the increase in births in the past 10 years?
(Large numbers of women of childbearing age, an echo of the baby boom.)
3. What is the formula for the "balancing equation?"
(Formula is on page 2 of chartbook.)

U.S. Population by Age and Sex

1. How is the age structure of the U.S. population projected to change between 1985 and 2035?
(There will be smaller proportions of young people and larger proportions of middle-aged and elderly people.)
2. What were some factors contributing to the baby boom?
(Economic prosperity, large family-size norms, people marrying at younger ages, and larger numbers of women of childbearing age.)
3. What features of American society will change as its population ages? Consider: economy, housing, labor force, health care, etc.
(More nursing homes and housing units, hopefully built with the needs of the elderly in mind. More medical facilities. More doctors will specialize in gerontology. More emphasis on consumer products and social services for middle-aged and elderly consumers. As more people retire, the proportion of full-time workers

may shrink; employers may need to attract older workers back to the labor force. Social security benefits may change as the proportion of people over age 65 increases.)

U.S. Household Composition

1. How much did the proportion of people living in non-family households increase between 1960 and 1985? What were some reasons for this increase?
(13 percent. Larger numbers of people living alone due to divorce, widowhood, people marrying later, and younger people living as singles after leaving the family household. Also more people are living with roommates who are not relatives.)
2. What factors have contributed to the decline in household size?
(Smaller family-size norms, adults living outside the family household, and laborers not living with the family.)
3. Describe the different types of households a hypothetical person might live in as he/she passes through the stages of the life cycle. What events lead to a change in household type?
(Many possible answers.)

Racial and Ethnic Composition

1. What factors are contributing to the decline in the relative size of the white non-Hispanic population?
(The rise in Asian and Hispanic immigrants, fertility lower than other groups, and a population older than other groups.)
2. What assumptions must be made to prepare a population projection? What drawbacks do projections have? How do demographers compensate for these drawbacks?
(Demographers must make assumptions about future fertility, mortality, and immigration. Projections assumptions are based on recent trends, which may prove to be incorrect indicators of future patterns. Demographers develop multiple scenarios based on different sets of assumptions.)

3. What factors draw immigrants to particular regions?
(Job availability, resemblance of the area to their former home, relatives or people with similar cultures residing in the area, and climate.)

The Wage Gap

1. Why do women and blacks often have a lower median income than white men with similar educational backgrounds?
(They take jobs in lower-paying occupations, have less experience, and are less likely to be in high-status positions.)
2. How has educational attainment changed for whites and blacks since 1940? Which groups are more likely to have a college education today?
(Men now have higher levels of education, while women did in the 1940s. In the 1940s whites averaged four years more education than blacks. Now they are almost equal. The ranking by likelihood of having a college degree is white male, white female, black female, black male.)

Migration to the U.S.

1. What factors have contributed to westward migration in the past?
(The Gold Rush, the search for farmland, the Homestead Act, and exploration.)
2. What has contributed to the decline of the farm population?
(Mechanization, which means that fewer people are needed to farm and the growth of agribusiness.)
3. What attracts migrants to the "Sunbelt?"
(Jobs due to the movement of industries and the climate.)
4. Why are migration rates highest for people in their twenties?
(This is a time during the life cycle when one experiences many changes, such as entering the labor force, getting married, and starting a family. These changes often necessitate a change in residence.)

For Further Research

1. Did the state in which you live gain or lose population between 1980 and 1986? Using the "balancing equation," fill in the components of change for your state. What factors affected these components to contribute to the population change? (Consider: age structure, migration, employment opportunities, etc.) Use **The United States Population Data Sheet** (sixth edition from PRB) or **The Statistical Abstract of the United States** for assistance.
2. What special services does your community provide for its senior citizens? Have the type and number of services provided changed in the recent past? If so, how and why? Contact your local government for assistance.
3. Make a list of the different household structures that can be found in your community (e.g., children living with parents, a married couple with no children, children living with grandparents, etc.). Based on the reading, "U.S. Household Composition," what categories do these fall in? Which types of household compositions are most common in your community? Can you think of communities where other household structures would be more prevalent?
4. What government policies have been passed to help improve the educational and occupational gaps between whites and blacks? Men and women? Have these measures been successful? Comment on the roles that different administrations have played in these efforts.

Classroom sets of the *U.S. Population: Charting the Change* student chartbook are available at the following prices:

1 copy \$2.00
2 or more \$1.75 each
Sets of six slides are available for \$6.00.

Please include \$1.00 or 5% of total order (whichever is greater) for shipping/handling. Orders under \$50.00 must be prepaid. An order form can be found at the back of the chartbook.

HELP!

In the readership survey sent to many of you in the October 1987 mailing, many of you suggested that workbooks to accompany data sheets would be a welcome item. Based on that positive response, PRB will be developing such a tool.

We know that many of you have already developed exercises to accompany the data sheet. If you have such exercises, to be included in the workbook, we would appreciate it if you would send them to:

Kimberly Crews
Population Education Program
Population Reference Bureau
777 14th St., N.W. Suite 800
Washington, D.C. 20005

We are collecting activities that can be used at the junior high, high school, and college levels. Please indicate the level for which the activity was developed. You will receive credit for any exercises that are published. Ideas are also welcome!!

RESOURCES

For the Student

Walker and Company introduces the new *THINK* Series. Two population-related titles in the series are **Immigration: Diversity in the U.S.** and **Our Population: The Changing Face of America**. Both are written by experts in the field and include pre-reading and review questions, important terms in boldface type, photos, graphs, original cartoons, a glossary, and bibliography. The extensive appendices include listing of public-interest groups and a resource section. Both books are excellent for provoking thought, discussion, and debate. Issue briefs are included in the appendix.

Immigration: Diversity in the U.S., by Leon F. Bouvier. 1988.

Bouvier opens the book with important definitions, a set of reasons for immigration, and a discussion of

how immigration affects the individual and the nation. A historical examination of immigration to the U.S. follows. It includes discussion of who migrants are, where they came from, the feelings of resident Americans at the time, and the impact of immigration laws. The third section introduces current immigration issues such as the "melting pot," illegal immigrants, the impact of immigration on the economy, the 1986 immigration law, and the effect that immigration will have on the future population. The author concludes with a look at the future, speculating on the future population size and composition of the U.S. and the resulting cultural, social, economic, and political implications. Stories about famous immigrants interspersed throughout the text make it especially attractive for students.

Our Population: The Changing Face of America, by Charles B. Nam. 1988.

This well-written book begins with an introduction on demographic concepts and the dynamics of population change. It continues with an overview of historical demographic trends including the baby boom, the baby bust, and the progress of the moves to improve life expectancy. Students are then introduced to controversial population issues, which are often the subject of debate. Included in this section are the positive and negative aspects of rapid population growth, the growth of ethnic minorities in the U.S., and the effects of contagious diseases such as AIDS. Nam concludes with a look at the future population of the U.S. and the world. He includes a discussion of population projections and a look at government policies and programs which may influence population growth.

Titles in the *THINK* series are 128 pages in length and available in hardback (\$14.85) or soft cover (\$5.95). There is a discount for bulk orders. To order, or to obtain a complete listing of the titles in the series, write to: Walker and Company, 720 Fifth Avenue, New York, New York 10019.

For Teacher and Student

Aspects of America: America's People, by World Eagle, Inc. 1987. World Eagle, Inc., 64 Washburn Avenue, Wellesley, MA 02181. \$24.95 each set, plus \$2.00 shipping and handling. (Bulk rates available.)

A set of 50 reproducible graphics on population and geographic topics. Topics include population in metropolitan areas, population density, and per capita income. Each set includes teacher notes, background material, quizzes, and comes with a durable 3-ring binder. Appropriate for grades 5 and higher. Excellent for developing chart and map reading and data analysis skills.

The American People, by Bryant Robey 1985. Truman Talley Books, E. P. Dutton, 2 Park Avenue, New York, N.Y. 10016. 287 pp. \$22.50 (hardcover).

This book contains an interesting discussion of a variety of topics including: the baby boom, the family, education, income, women, ethnic groups, black and white differentials, and more. An easy-to-read analysis of current demographic trends.

Many People, One Nation, by Bernard A. Weisberger. 1987. Houghton Mifflin Company, Wayside Road, Burlington, MA 01803. 343 pp. \$9.95 (softcover).

An in-depth, historical view of immigration to the United States and migration within the United States. It includes descriptions of American attitudes toward various ethnic and racial groups and debates over international immigration laws. Topics covered include: the immigration of Hispanics, rural to urban migration, the earliest European settlers, and refugees. This illustrated book is appropriate for advanced students.

USA by Numbers: A Statistical Portrait of the United States, edited by Susan Weber. 1988. Zero Population Growth, Inc., 1601 Connecticut Ave., N.W., Washington, D.C. 20009. 164 pp. \$8.95 (plus \$1.50 for shipping and handling).

A set of population and population-linked social, economic and environmental indicators, with just enough analysis, compiled in an

easily understood format. Topics covered include: teenage pregnancy, child poverty, unemployment, pollution, and immigration, among others.

We, The Black Americans, by Dwight L. Johnson of the Public Information Office, U.S. Bureau of the Census. Number 3 in the *We the American People Series*. 1986. U.S. Government Printing Office, Superintendent of Documents, Washington, D.C. 20402. 13 pp. \$1.00.

An easy-to-read portrayal of the Black American population through words, photographs, tables, and charts. It includes information on population growth and distribution, education, income, family composition, labor force status, and more. Also available in the series are "We, the American Women," and "We the Mexican Americans."

Audiovisual Resources

The Aging of America. 1988. Available in all video formats. Guidance Associates, Communications Park, Box 3000, Mount Kisco, New York 10549-0900. VHS and Beta \$129.00, 1/4" U-matic \$149.00, plus postage.

This CNN special report produced by Turner Educational Services takes a look at the lifestyles of the growing elderly population. It includes discussion of issues such as the health, economic security, and activities of the elderly.

The Aging of North America. 1986. 25 minutes. 1/2" VHS. (Available for rental from the PRB Population-Environment Film Library.)

Excellent coverage of the demographic factors contributing to the increasing numbers of older people balanced with discussion of the positive social implications of an aging society. Dr. Ken Dychtwald, an international authority on gerontology, describes the changing roles of the elderly in North America, a successful senior citizen health program, and the implications of an aging society on social systems.

Available for purchase in 16mm and all video formats from: Perennial Education, Inc., 930 Pitner Ave., Evanston, IL 60202. \$450.

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- "Demographic Illiteracy," February 1988
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- "Nature's Checks on Population Growth," December 1986
- "A Potpourri of Population Puzzles," May 1986
- "A Guide to Classroom Software," December 1985
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Interchange Is . . .

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POPULATION EDUCATION INTERCHANGE

October 1988 Volume 17, Number 3

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Teacher's Guide to *Facts in Focus*

In October 1987, many of our members received a Readership Survey, which asked for information about our current publications and suggestions for additional services. Many respondents expressed interest in a workbook to accompany the *World Population Data Sheet*. With the help of some readers, who submitted exercises that they had developed to use with the *Data Sheet*, we have produced *World Population: Facts in Focus*.

We had several goals in mind when we began developing this teaching tool. First, we wanted to print the 1988 *World Population Data Sheet* in an 8½" by 11" page format, as many of you have requested. Next, we wanted to provide a tool that could be used by students from junior high through college. Finally, we wanted a product that was long-lasting and versatile. This teaching tool is appropriate for use in many subjects, has varying levels of difficulty, includes activities that may be used individually or as a complete unit, and will be appropriate for use with successive *Data Sheets*.

We have produced a tool appropriate for students of many levels by providing a variety of activities with varying levels of rigor. Some call for simply finding information on the *Data Sheet* (this is a useful introductory activity), while others call for making calculations, analyzing, graphing, or mapping. There is something here for everyone.

While most of the activities are more appropriate for social studies or geography classes, some are also appropriate for science, environmental studies, or mathematics. Please share these materials with your colleagues.

1988 World Population

Region or Country	Population (millions)	Crude Birth Rate	Crude Death Rate	Infant Mortality Rate (per 1,000 live births)	Life Expectancy at Birth (years)	Sex Ratio (males per 100 females)	Population Density (per sq. km)	Urban Population (%)	Population Growth Rate (%)	Population Doubling Time (years)
WORLD	5,185	25.15	11.74	46	67.75	102.5	32.5	47.5	1.25	55.5
MORE DEVELOPED	1,185	15.9	8.8	15	75.5	107.5	115.5	1.5	0.5	145.5
LESS DEVELOPED	4,000	31.15	21.1	35	63.5	97.5	25.5	45.5	2.0	35.5
LESS DEVELOPED (excl. China)	2,865	35.15	24.5	35	60.5	97.5	15.5	45.5	2.5	28.5
AFRICA	555	44.15	23.5	35	55.5	107.5	15.5	45.5	3.5	25.5
NORTHERN AFRICA	155	35.15	12.5	25	65.5	107.5	15.5	45.5	1.5	75.5
Algeria	24.2	42.10	12.7	22	63.5	107.5	15.5	45.5	1.5	75.5
Egypt	53.3	35.9	2.8	24	67.5	107.5	15.5	45.5	1.5	75.5
Libya	4.9	35.8	3.1	22	65.5	107.5	15.5	45.5	1.5	75.5
Morocco	25.9	35.10	2.6	21	63.5	107.5	15.5	45.5	1.5	75.5
Sudan	24.8	45.16	2.8	24	63.5	107.5	15.5	45.5	1.5	75.5
Tunisia	7.7	31.9	2.7	21	63.5	107.5	15.5	45.5	1.5	75.5
Western Sahara	0.2	45.25	2.5	25	63.5	107.5	15.5	45.5	1.5	75.5
SOUTHERN AFRICA	400	47.15	23.5	35	55.5	107.5	15.5	45.5	3.5	25.5
Botswana	1.5	51.25	10.7	21	63.5	107.5	15.5	45.5	1.5	75.5
Lesotho	0.5	45.19	2.8	24	63.5	107.5	15.5	45.5	1.5	75.5
Swaziland	0.5	45.15	2.8	24	63.5	107.5	15.5	45.5	1.5	75.5

The 1988 *World Population Data Sheet* appears in 8½" x 11" page format in *World Population: Facts in Focus*.

This workbook was designed as a tool to be used from one to five class periods. The 1988 *World Population Data Sheet* appears on four pages in the center of the booklet for easy access by the reader. This central section also contains the definitions used on the *Data Sheet*; notes from the authors; countries, areas, and population densities; as well as some of the charts that appeared on the wall-size *Data Sheet*. A world map and a section of additional readings and resources round out the workbook.

All of the pages in *World Population: Facts in Focus* are perforated along the inside margin to allow students to detach and hand in the completed exercises or to accommo-

date photocopying by the teacher. The exercises can be completed without additional reading. However, additional materials, such as a calculator, are needed to complete some of the activities.

The Teacher's Guide to *World Population: Facts in Focus*, which includes the appropriate grade levels for the activities, materials needed, and answers to the exercises, can be found on page 2 of this issue of *Population Education Interchange*.

On page 3 of this issue, you will find an additional *Data Sheet* worksheet, "Where in the World?"

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Teachers Guide to World Population: Facts in Focus

Grade Level

Junior High-College

Subjects

This workbook is most appropriate for the following: Social Studies, Mathematics, Geography, and Science.

Time Needed

"The World Population Data Sheet at a Glance" requires one to two class periods, depending on the level of the students. "Figure it Out" also requires one to two class periods (students may need additional time to complete exercise #6). "Analyzing the Data" requires one class period. The time needed for "Mapping the Data" will vary depending on the length of the assignment and the level of the students (at least one class period is needed).

Materials

Copies of the workbook are needed for each student. Teachers may order classroom sets of the workbook (ordering information is on the inside front cover of the workbook). Students may need a calculator to complete the exercises in "Figure it Out." They will need an atlas, colored pencils, and a map. (A world map is included in the workbook, but if you wish to have your students study a specific region, you will have to supply an appropriate map.)

Goal

To encourage students to: examine worldwide data on demographic and economic variables; examine trends in world population change; develop data calculation skills; and develop analytical skills.

Objectives

By completing the exercises which complement the *World Population Data Sheet*, students should be able to:

- Locate specific data in a table;
- Rank information;
- Detect patterns in the data;
- Define some basic demographic terms;
- Determine mathematical formulas to apply to given data;
- Locate countries on a map;
- Use graphs, charts, maps, and formulas to analyze population phenomena; and
- Analyze the interrelationships among different variables.

Answers to Workbook Exercises

"The World Population Data Sheet at a Glance"

- 1 5.128 billion
- 2 1) China, 2) India, 3) USSR, 4) US, 5) Indonesia, 6) Brazil, 7) Japan, 8) Nigeria, 9) Bangladesh, 10) Pakistan
- 3 births, deaths, natural increase, infant mortality, fertility.
- 4 Sierra Leone; Qatar
- 5 Afghanistan (183); Japan (5.2)
- 6 Rwanda and North Yemen (8.5); 1.4
- 7 Kenya, Sweden
- 8 Japan; Sierra Leone
- 9 Libya; Singapore; Argentina; Belgium; Australia
- 10 Switzerland; US
- 11 a. Africa; Europe
b. Kenya and Rwanda; Hungary
- 12 Population Projected to 2000 and Population Projected to 2020
- 13 In 2000, 1) China; 2) India; 3) USSR; 4) US; 5) Indonesia; 6) Brazil; 7) Nigeria; 8) Bangladesh; 9) Pakistan; and 10) Japan. In 2020, 1) China; 2) India; 3) USSR; 4) US; 5) Nigeria; 6) Indonesia; 7) Pakistan; 8) Brazil; 9) Bangladesh; and 10) Mexico.
a. Japan; Mexico
b. Japan moves out of the top ten, both Nigeria and Pakistan move up several notches, and Brazil moves down in the rankings.
- 14 1) Asia; 2) Africa; 3) Europe; 4) Latin America; 5) USSR; 6) North America; and 7) Oceania
a. By 2000 Latin America will pass Europe.

- 15 6.7 billion; the low series projection assumes a lower level of fertility than the high series projection
- 16 These profiles show the age and sex distributions for the populations in LDCs and MDCs. The profile of the LDC shows a higher proportion of the population in the younger age groups. The age of the MDC population is more evenly distributed. The profile of the MDC will become even more evenly distributed by age by 2025.

"Figure it Out"

- 1 India (16.3 million added), China (15.2 million added), Kenya (955,000), with Kenya's rate of growth India would add 33.5 million
- 2 Africa, 12.1%; Asia, 58.4%; North America, 5.3%; Latin America, 8.4%; Europe, 9.7%; Oceania, 0.5%; and USSR, 5.6%
In 2000, Africa, 14.3%; Asia, 58.5%; North America, 4.8%; Latin America, 8.7%; Europe, 8.2%; USSR, 5%; Oceania, 0.5%
In 2020, Africa, 18.6%; Asia, 57.5%; North America, 4.1%; Latin America, 8.8%; Europe, 6.2%; USSR, 4.4%; Oceania 0.4%
- 3 77% in LDCs, 23% in MDCs
- 4 Formula: Crude Birth Rate - Crude Death Rate ÷ 10 = Rate of Natural Increase
- 5 The factors that contribute to a high age-dependency ratio are high fertility and low mortality
- 6 The projection for 2000 incorporates a declining rate of natural increase as fertility levels are expected to decline. It also incorporates improvements in mortality. The formula used above assumes a constant growth rate.

Answers to "Where in the World?"

- | | |
|------|------|
| 1. G | 6. I |
| 2. A | 7. H |
| 3. C | 8. D |
| 4. E | 9. F |
| 5. B | |

WHERE IN THE WORLD?



Graphics by Joanna Lawrence

Instructions

- The numbers on the map above represent the location of the places listed below (1-9).
- Seven demographic variables are found in the table below. Study the variables and examine carefully the data for the places illustrated in columns A through I. Note the variations in the data.
- Now that you have examined all the data, match each of the data sets (A through I) to the correct place name (1 through 9). For example, the correct data set for the U.S. is found in column B.

Countries

_____ 1. USSR _____ 2. Kenya _____ 3. China _____ 4. Mexico _____ 5. U.S.
_____ 6. Japan _____ 7. Albania _____ 8. West Germany _____ 9. Singapore

Table¹

Demographic
Variables

Data Sets

	A	B	C	D	E	F	G	H	I
Birth Rate	54	16	21	10	30	15	20	27	11
Death Rate	13	9	7	11	6	5	10	6	6
Infant Mortality	76	10.0	44	8.6	50	9.4	25	43	5.2
Natural Increase	4.1	0.7	1.4	-0.1	2.4	1.0	1.0	2.1	0.5
Percent Urban	19	74	41	94	57	100	65	34	77
Life Expectancy	54	75	66	75	62	73	69	71	78
Per Capita GNP	\$300	17,500	300	12,080	1,850	7,410	7,400	840	12,850

1. Source: Population Reference Bureau, 1988 *World Population Data Sheet*

Adapted from, "Different Folks with Different Strokes," developed by Robert D. Klingensmith, Ohio State University.

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New in the AV Library

The following videotapes are now available for rent from the Population Reference Bureau Film Library. Due to a loss of funding, which subsidized the film library, the rental fee has been raised to **\$20.00** per film, videotape, or slide program. Send orders to: Film Librarian, Population Reference Bureau, 777 14th St., N.W., Suite 800, Washington, D.C. 20005. Send a self-addressed stamped envelope for a complete listing of film library holdings.

The Aging of North America. 1986, 25 minutes, 1/2" VHS.

Excellent coverage of the demographic factors contributing to the increasing numbers of older people balanced with discussion of the positive social implications of an aging society. Dr. Ken Dychtwald, an international authority on gerontology, describes the changing roles of the elderly in North America, a successful senior citizen health program, and the implications of an aging society on social systems.

Children of Children. 1988, 30 minutes, 1/2" VHS.

In this excellent discussion of teenage pregnancy, teenage parents frankly discuss the reasons for so many teen pregnancies, reasons for avoiding pregnancy, and their feelings about their lives after the births of their children. This program reviews misconceptions about pregnancy and birth control and parent-teen communication about sex. It concludes with an examination of community programs working to curb teenage pregnancy.

Child Survival: The Silent Emergency. 1985, 58 minutes, 1/2" VHS.

This moving film tracks the progress of the Child Survival Revolution led by the United Nations Children's Fund (UNICEF). The Revolution, launched in late 1982, uses the following strategies to combat child mortality: growth monitoring, oral rehydration, breastfeeding education, and immunization. An excellent depiction of the relationship between child mortality and world population growth and the importance of the status of women as a factor in the health of a society.

The Desert Doesn't Bloom Here Any More. 1987, 58 minutes, 1/2" VHS.

This film admirably shows the issues of concern to farmers living near or in deserts in both industrialized and developing nations. Farmers in Burkina Faso are shown in the first part of the program as they fight the advance of the Sahara Desert. The second part shows how the U.S. government has subsidized irrigation projects, which in the short run have increased agricultural projects, but in the long run have damaged the land and endangered wildlife. Coverage of both low- and advanced-technology innovations shows the complexity of the situation and the lack of simple solutions for meeting the needs of the people and solving environmental problems.

Global Links. 1987, each program 28 minutes, 1/2" VHS.

Global Links is a six-part series of half-hour videotapes which serve as an excellent resource for teaching about social and economic development in developing nations. Programs touch upon the interdependence that affects the economic, political, and social structures of both developing and industrial nations. The programs are, *Traditions and the 20th Century*, *The Curse of the Tropics*, *Women in the Third World*, *Earth: The Changing Environment*, *Education: A Chance for a Better World*, and *The Urban Dilemma*.

Human Numbers, Human Needs. 1986, 19 minutes, 1/2" VHS.

Based on the International Planned Parenthood Federation's 1984 book, *Human Numbers, Human Needs*, this program completely and concisely discusses the pressures human population growth places on resources and the environment. The program contains the necessary introduction to population dynamics, and then links this growth to food supply, education, health care, employment, and environmental destruction, among other issues. It offers some solutions to assist in family planning efforts. A slide presentation on videotape, the program's information is delivered in an unbiased, interesting manner.

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POPULATION EDUCATION INTERCHANGE

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What is Overpopulation?

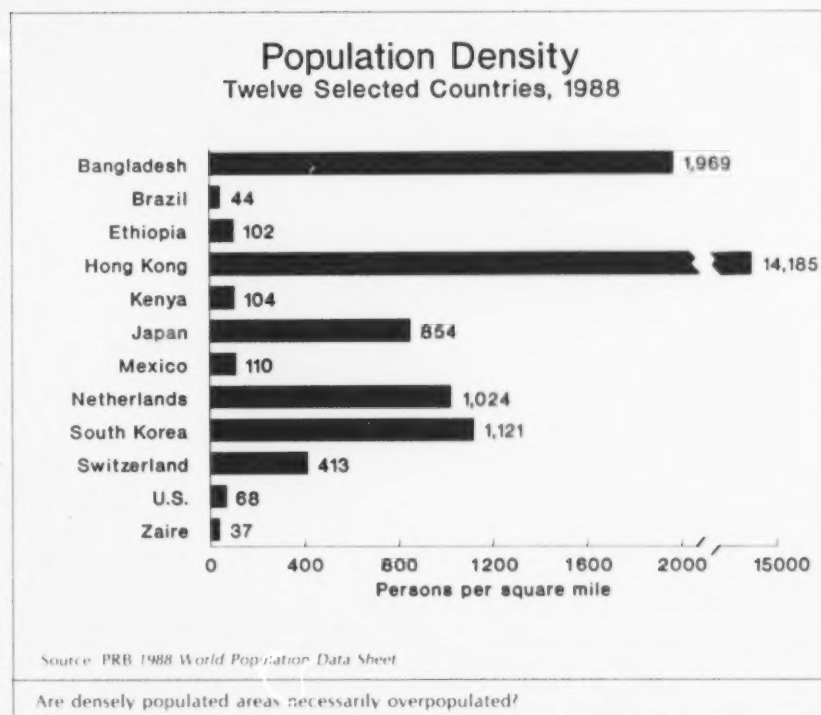
PRB staff members regularly receive requests from students seeking information about "overpopulation." These requests have been a matter of some concern as students rarely indicate what they mean by "overpopulation." This makes it very difficult to determine what information to send them. "Overpopulation" is a relative, not absolute term. Do I assume that their conception of "overpopulation" is the same as mine? Our main concern is that inquirers may merely be parroting a term widely used in our society or are attempting to complete an assignment, but have not thought through what they mean by "overpopulation."

The goal of this essay, is not to define "overpopulation," but to help teachers guide their students as they develop their own definitions. This piece begins with an illustrative interpretation of the term, continues with a breakdown of the concepts in that interpretation, and concludes with some tentative definitions of "overpopulation" and the ramifications of their use. It will attempt to show the complexities involved in attempting a definition of "overpopulation."

How Much is Enough?

Let's start with what I consider to be a reasonable working definition of overpopulation by an author in the field: "... when there are more people than can live on the earth in comfort, happiness and health and still leave the world a fit place for future generations."

For each component of this definition, there are many issues which need to be considered. For example, under the category of "comfort," housing, food, health, and perhaps employment are a few topics that come to mind. But the standard by



which these items could be judged is subjective. For example, on the issue of housing, the following questions might be asked. What kind of housing? How much space for each person? Is there heat or air conditioning? What is necessary for comfort? Here is where the problem lies. What some people might consider necessities for basic survival, others might consider luxuries. Is a North American's idea of comfort the same as a Chinese person's or a Nigerian's?

Consider food. Some people consider meat a necessary part of their diet. Yet average protein consumption in many countries is well above that deemed necessary for a healthy life. One's idea of carrying capacity (see box on carrying capacity) could vary dramatically based on the type

of diet considered. A community which requires a lot of meat in the diet would probably have a lower carrying capacity than one which was more vegetarian, since it takes more energy and other inputs to produce meat than vegetables.

Is it possible to come up with a definition for "happiness" that would satisfy everyone in the world? One person's definition of happiness might be "to provide adequate shelter, food, and health care for my family," while another's might be "to have two cars, a big house, servants, and a swimming pool." Again, carrying capacity would be affected by the determinants chosen to define happiness.

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What about health? Certainly health affects comfort and happiness, but what health standards are appropriate? Do we want to eliminate infant and child mortality completely? Do we want to have a life expectancy at birth of 55 or 75 years? Do we want to save everyone's life at any cost? The standards of health considered to be appropriate in a society would certainly have an impact on its carrying capacity.

And finally, consider "leaving the earth a fit place for future generations." What, for example, is "fit?" Does that mean completely pollution free? Can we assume that future generations will develop technologies to create or tap new energy resources and eliminate pollution? Or do we assume that future generations will basically have the same resource limitations that we do? Is the damage caused by pollution, desertification, and deforestation reversible? These are some of the questions that might be asked about the state of the planet.

Many other issues could be discussed here. For example, should each country be considered separately or should we think of the world as one community when we consider the issue of "overpopulation?" After all, most countries depend upon resources from others for survival. So a seemingly simple interpretation of "overpopulation" leaves a lot of room for differences of opinion.

Can technical measurements lead to an objective definition of "overpopulation?"

Measuring Overpopulation

Sometimes people measure "overpopulation" by the population density of an area or the amount of arable land per person. As the chart on page 1 shows, areas that many people consider to be overpopulated are not necessarily densely populated. For example, Mexico may be considered to be "overpopulated" because of its economic problems, but the Netherlands and Japan which are more densely populated than Mexico may not be considered overpopulated because of their healthy economies. Even more dramatic examples are densely-populated Hong Kong, where the per capita Gross National Product is nearly \$7,000, compared to sparsely populated Ethiopia, which faces severe food shortages.

A large population may be an asset or a drain to a country depending on many factors including the type of economy, the culture, social organization, and life-style expectations.

In 1945, Frank Lorimer suggested three definitions of "overpopulation": an area is overpopulated if fewer people would lead to a higher level of living, if population increase is more rapid than possible production increase, or if continuance of present growth trends would check economic advances.¹ Thomlinson responds in 1965: "Using the first definition, about 95 percent of the world is overpopulated; using the second, there is little overpopulation; and using the third, about one-half of the world is overpopulated."²

Obviously the term "overpopulation" is not as simple to delineate as it may seem at first glance. Each community is different and cannot be judged by a universal standard. When debating the status of a community, consideration must be given to population growth rates, standard of living, lifestyle, culture, technology available, resources, type of economy, as well as a host of other variables.

Limits to Population Growth Diverging Viewpoints

When reading about the earth, its resources, and the number of people it can support, you will encounter diverse perspectives. One viewpoint on the earth and its resources is called the "limits thesis" and is generally shared by environmentalists and ecologists:

"there are definite limits to population and economic growth, limits which are imposed by the finiteness of the earth — by the fact that air, water, minerals, space, and all usable energy sources consist of fixed stocks that can be exhausted or flows that can be overloaded."³

The "Cornucopian Thesis," often supported by economists, states:

"there are limits to growth only if science and technology cease to advance, but there is no reason why such advances should cease. So long as technological development continues, the earth is not really finite; for technology creates resources."⁴

Carrying Capacity

Carrying capacity is the number of people that can be supported in an area, given its physical resource base and the way that base is used. When contemplating potential carrying capacity, it is important to consider climate, landforms, resource availability, technological inputs, the number of people, levels of production and consumption, the impact on the resources and the environment, as well as other social and economic criteria. Also, bear in mind that carrying capacity is a dynamic concept; it is constantly changing as technology changes, values change, cultures change, resource availability changes.

Some authorities have attempted to estimate carrying capacity. The following confirms the importance of examining the variables used to come up with a value. One critic of the concept reports that, in 1970, a United Nations study asked: "Given the present world-wide industrial and agricultural capacity, technological development, and resource exploitation, how many people could be supported on earth today with the standard of living of the average American?" At that time, the response was 500 million.⁵ Other estimates ranged from millions to tens of billions.

1. George Morris, *Overpopulation: Everyone's Baby*. London: Priory Press Limited, 1973, pp. 24.

2. Frank Lorimer, "Issues of Population Policy," in Kingsley Davis (ed.), "World Population in Transition," *The Annals of the American Academy of Political and Social Science*, Vol. CCXXXVII (January 1945), pp. 193-203.

3. Ralph Thomlinson, *Population Dynamics: Causes and Consequences of World Demographic Change*. New York: Random House, 1965, pp. 378.

4. Ronald G. Ridker and Elizabeth W. Cecelski, "Resources, Environment, and Population: The Nature of Future Limits," *Population Bulletin*, Vol. 34, No. 3 (August 1979), pp. 3-4.

5. Ibid. pp. 3-4.

6. Richard A. Watson and Philip M. Smith, "The Limit: 500 Million," in Edward Pohlman (ed.), *Population: A Clash of Prophets*. New York: The New American Library, 1973, pp. 194.

INTERCHANGE

This is the final edition of *Population Education Interchange*. PRB will continue to produce teaching tools, but *Population Education Interchange* is being discontinued. Based on a budget analysis and results from our readership survey, we decided to concentrate on developing products more specifically adapted to different grade levels. PRB's monthly newsletter, *Population Today*, and other publications will continue to cover topics previously carried in *Population Education Interchange*. A more complete discussion of publication changes appears below.

A History of PRB's Population Education Program

In 1972 PRB launched *Interchange*, the population education newsletter. This newsletter served the education community for 16 years as a source of ideas and information about population as well as techniques and materials to communicate it. The newsletter's primary audience has been teachers, curriculum supervisors, administrators, and others involved in population and education.

In 1977, the Population Education program began producing teaching modules to accompany *Interchange*. These modules originally were self-contained classroom strategies, with objectives, procedures, graphic material, and other data. Over the years the production of these modules has evolved, with varying formats. Teaching tools now include chartbooks, workbooks, and student essays with activity sheets.

PRB's education program also conducts teacher-training workshops, provides a resource library, and runs a Population/Environment Film Library. Recently, the Population Education staff has been conducting up to 15 teacher-training workshops each year. They include sessions at National Science Teacher Association conferences, National Council on the Social Studies meetings, as well as in-service workshops, and Geographic Alliance meetings, among others. These workshops give participants

background information on world and United States population issues, introduce them to appropriate teaching materials, and provide them with stimulating learning activities that can be used in the classroom.

Population Education staff also review and collect a wide array of educational materials. These materials, which include software, books, magazines, kits, and games, are kept in the Population Education library at PRB and can be examined by interested parties. Population Education staff also respond to inquiries from teachers requesting information on materials appropriate for teaching specific population topics. The library also includes films, which can be rented for a fee of \$20.00 for slides, videotapes, filmstrips, and 16 mm films.

Population Education, 1989

PRB has just completed an assessment of its publications program. We determined that our educational materials were not always reaching the appropriate audiences, that some materials could be improved to better serve their intended audience, and that often materials that would be useful to educator audiences were not being utilized as effectively as possible. In the past, our teaching modules have been designed for use at both the college and high school level. That strategy has worked for some materials, but not all others. To improve things, we have decided to make a concerted effort to make materials specifically appropriate for either high school or college level audiences. We will make *Population Bulletins* more useful for college audiences by providing discussion points in each issue. The first such set appeared in the October 1988 *Bulletin*, "America's Elderly."

We will continue to produce two sets of teaching materials (i.e., "World Population: Facts in Focus") each year. Some materials will be designed for use in both high schools and college, but most will be specifically designed for use in secondary schools. These materials will not be included in mailings sent to PRB members, but will be availa-

ble for direct sale either in bulk or individual copies.

In addition, Population Education staff will make regular contributions to *Population Today* and produce periodic resource guides. Teacher-training services, operation of the Population-Environment Film Library, and upkeep of the Population Education Resource Center will also continue.

If readers have any questions concerning PRB's Population Education publications or services, we will be happy to respond to correspondence or phone calls. Contact:

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RESOURCES

Software

Quest for Files: Social Studies are databases which provide students with information allowing them to select historical files to analyze and compare historical events and characters. These activities build critical thinking and research skills. The creation of an historical database is a great idea, but unfortunately I found the program difficult to use, poorly programmed in some areas, not user friendly, and missing information from its database.

Families of the World: The Melting Plot contains profiles of 29 families ranging over time from 100 to 1984 A.D. The families represent 11 countries with the occupations of the heads of families ranging from slave to farmer to Roman senator. Each family is described by a set of 43 variables including number in family, occupations of family members, years of schooling, hours worked by family in an average week, and the tolerance of the family and the society in which they live to a variety of values. These families were selected for comparison and contrast and represent a cross section of a particular socioeconomic, religious, or cultural group, in a particular place and time. For example, the list contains

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four families in 100 A.D. — two from Rome, two from China; students could compare the lifestyles of the families for the time or compare two families of different socioeconomic levels from the same location.

The package contains three lessons which guide students through a particular historical phenomenon. They are asked to analyze farmers throughout history, implications of immigration to the U.S., and post-World War II social and economic changes in Japan. Students can also build their own hypotheses and use the databases to test them.

I was interested in analyzing the historical questions posed in the lessons, but often was frustrated by the lack of feedback in the program. The user is never given any indication of whether they are on the right or wrong track. Several times I received the message, "NO RECORDS MATCH YOUR REQUEST," but no feedback was given to help correct the error. I also found it difficult to move around within the program; it often seemed as if the appropriate prompts were not among the choices given. The user also does not have the ability to limit the information received.

Quest for Files was designed for use in the high school. It is appropriate for those with little computer background. The 35-page manual contains useful suggestions for classroom use and student worksheets.

The *Quest for Files: Social Studies* series includes "Families of the World: The Melting Plot," "The American Presidency: Hail to the Chief," and "The First U.S. Congress: Dawn's Early Light." It is available for use with Apple, II/II+ /IIC/IIGS, IBM, and Tandy 1000. The cost for the complete series is \$125.00. Individual programs may be purchased for \$49.95 (Lab Pack, \$99.90) from Mindscape, Inc., Educational Division, Dept. C, 3444 Dundee Road, Northbrook, IL 60062.

Other Resources

USA by Numbers Teaching Kit by Deborah Brouse. 1988. Zero Population Growth, 1400 16th Street, N.W., Suite 320, Washington, D.C. 20036. \$19.95 prepaid.

This kit is based on Zero Population Growth's book *USA by Numbers*, a compilation of current and historical data on demographic, socioeconomic, and environmental trends in the United States. The activities in the kit are designed to develop critical thinking, deductive reasoning, chart reading, data interpretation, graphing, and communication skills. The kit includes a copy of *USA by Numbers*, 14 classroom activities, a teacher's guide, glossary, and resource list. The activities are designed for high school and college-level science, social studies, geography, math, and language arts classes.

Census '90 Census Education Project

The Census Bureau is gearing up for the 1990 Census. The Census Education Project will provide elementary and secondary educators with teaching materials that will expose students and their families to the census. The teaching package includes exercises, teacher's notes, and suggestions for related classroom, school, and district activities. The materials are appropriate for kindergarten through 12th grade and include ideas for contests and exhibits, background information for the educator, reproducible activity sheets, some material in Spanish translation, and a teaching resource guide. Social studies and mathematics instructors will find these materials most useful.

Each school principal and school district superintendent will receive a copy of the kit before the end of the 1988-1989 school year. This will allow time for incorporation into the 1989-1990 curricula, and for language and local adaptation. The materials are intended for peak use in the two weeks prior to Census Day — April 1, 1990.

Teachers should obtain copies of the kit from principals or superintendents; however, a limited supply will be available directly from the Government Printing Office (GPO). Call Customer Services at (301) 763-4100 for ordering information or write for the GPO Order Form to: Customer Services (Order Desk), Bureau of the Census, Washington, DC 20233. The kits will be available in the Spring of 1989.

PRB Materials and Memberships

Are you interested in rounding out your *Population Education Interchange* collection? Back issues of *Interchange* are available for \$1.00 each, two or more copies, 75¢ each. Titles include:

- "What Is Overpopulation?" December 1988
- "Demographic Illiteracy," February 1988
- "Where is the Metropolitan U.S.?" December 1987
- "Mexico's Population: A Profile," May 1987
- "Nature's Checks on Population Growth," December 1986
- "A Potpourri of Population Puzzles," May 1986
- "A Guide to Classroom Software," December 1985
- "The Food Crisis in Sub-Saharan Africa," March 1985

Back issues of the *Population Learning Series* modules, which are accompanied by an issue of *Interchange*, are also available for \$2.00 each, two or more copies, \$1.75 each. See a list of titles on the back page of the *Population Learning Series*.

If you find *Population Education Interchange* interesting and useful, you would probably enjoy receiving other PRB publications. PRB has a special membership rate for teachers. For only \$28 per year, an Educator Member receives four issues of *Population Education Interchange*, two *Population Learning Series* Modules, The *World Population Data Sheet*, The *U.S. Population Data Sheet*, four *Population Bulletins*, 11 issues of *Population Today*, and occasional issues of the *Population Trends and Public Policy* series.

To join, send your name, address (and school affiliation, if different from address), and check to: Population Reference Bureau, P.O. Box 96152, Washington, D.C. 20090-6152.

Interchange Is...

a publication of the Population Reference Bureau, published quarterly during the academic year. This issue was written by Kimberly A. Crews. The purpose of the newsletter is to further the goal of infusing population materials into the U.S. schools by (1) presenting information on population-related issues, (2) distributing classroom materials, and (3) reviewing developments in the field of population education. *Interchange* depends upon an exchange of information and ideas and thus openly solicits correspondence from its readers.

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